

**CLAIMS**

Now, therefore, the following is claimed:

1           1.       A system for protecting configuration data of a programmable  
2        execution unit, comprising:  
3                a programmable array; and  
4                programming logic configured to receive configuration data and to program  
5        the programmable array, based on the configuration data, such that the programmable  
6        array comprises functional logic and activation logic, the activation logic configured  
7        to enable the functional logic upon detection of an activation key.

1           2.       The system of claim 1, wherein a portion of the configuration data  
2        comprises data representative of an activation key, the programming logic configured  
3        to store the data representative of the activation key in the programmable array.

1           3.       The system of claim 2 wherein the activation logic is further  
2        configured to compare a received bit stream to the stored data representative of the  
3        activation key, the activation logic further configured to enable the functional logic if  
4        a portion of the second bit stream matches the activation key.

1           4.       The system of claim 2 wherein the data representative of the activation  
2        key comprises a copyright notice corresponding to the configuration data.

1           5.       The system of claim 1, wherein a portion of the configuration data  
2        represents an activation key, the activation logic configured to cryptographically hash

3 the portion into a first hash value and store the first hash value in the programmable  
4 array.

1           6.       The system of claim 5, wherein the activation logic is further  
2 configured to cryptographically hash a received bit stream into a second hash value,  
3 the activation logic further configured to compare the first hash value with the second  
4 hash value, the activation logic configured to enable the functional logic if the first  
5 hash value substantially corresponds to the second hash value.

1           7.       The system of claim 6, wherein the activation key comprises a  
2 copyright notice corresponding to the configuration data.

1           8.       A system for protecting configuration data of a programmable  
2 execution unit, comprising:  
3            a programmable execution unit (PEU) comprising programming logic  
4 configured to receive configuration data for programming a programmable array  
5 resident on the PEU; and  
6            a device configured to transmit an activation key to the programmable  
7 execution unit, the programmable array configured to enable the PEU in response to  
8 the transmitted activation key.

1           9.       The system of claim 8, wherein the configuration data comprises  
2       functional logic configuration data and activation logic configuration data, the  
3       programming logic configured to program the programmable array with functional  
4       logic corresponding to the functional logic configuration data and activation logic  
5       corresponding to the activation logic configuration data.

1           10.      The system of claim 9, wherein the activation logic configuration data  
2       comprises data representative of a valid activation key, the programming logic further  
3       configured to store the data in the array.

1           11.      The system of claim 10, wherein the activation logic is configured to  
2       compare the stored data representative of the activation key with the transmitted  
3       activation key, the activation logic further configured to enable the PEU if the  
4       transmitted activation key and the data representative of the valid activation key are  
5       substantially similar.

1           12.      An apparatus for protecting a design of a programmable execution unit  
2       (PEU), comprising:  
3           a storage unit comprising configuration data;  
4           a channel for transferring the configuration data from the storage unit to the  
5       PEU; and  
6           a system controller configured to transmit an activation key to the PEU.

1           13.      An apparatus as claimed in claim 12, wherein a portion of the  
2       configuration data comprises data representative of the activation key.

1           14. An apparatus as claimed in claim 13, wherein the PEU comprises  
2   activation logic configured to store the data representative of the activation key, the  
3   activation logic further configured to perform a comparison of the transmitted  
4   activation key and the stored data representative of the activation key, the activation  
5   logic further configured to enable the PEU if the comparison indicates substantial  
6   similarity.

1           15. A system for protecting configuration data of a programmable  
2   execution unit (PEU), comprising:  
3           means for storing the configuration data;  
4           means for transmitting the configuration data to the PEU;  
5           means for programming the PEU in accordance with the configuration data;  
6   and  
7           means for enabling the PEU when the programmable execution unit receives  
8   an activation key.

1           16. A method of protecting configuration data associated with a  
2   programmable execution unit (PEU), comprising the steps of:  
3           transmitting the configuration data from a storage device to the PEU over a  
4   channel;  
5           determining when all the configuration data has been transferred to the PEU;  
6   and  
7           transferring an activation key to the PEU.

1           17. A method for protecting configuration data of a programmable  
2 execution unit (PEU), comprising the steps of:  
3           receiving configuration data representative of a desired configuration for a  
4 PEU;  
5           programming the PEU based on the configuration data;  
6           receiving a bit stream;  
7           monitoring the bit stream for an activation key; and  
8           enabling the PEU in response to the activation key.

1           18. The method of claim 17, wherein the configuration data comprises a  
2 portion of data representative of an activation key and the programming step further  
3 comprises the steps of:  
4           storing the data representative of the activation key on the PEU.

1           19. The method of claim 18, wherein the receiving a bit stream step further  
2 comprises the step of comparing the bit stream to the stored data representative of the  
3 activation key.

1           20. The method of claim 19, further comprising the step of:  
2           enabling the execution unit if the bit stream corresponds to the data  
3 representative of the activation key.

1           21.    A method for protecting configuration data of a programmable  
2    execution unit (PEU), comprising the steps of:  
3            receiving configuration data;  
4            programming the PEU, based on the configuration data, such that the  
5    programmable array comprises functional logic and activation logic; and  
6            enabling the functional logic upon detection of an activation key by the  
7    activation logic.